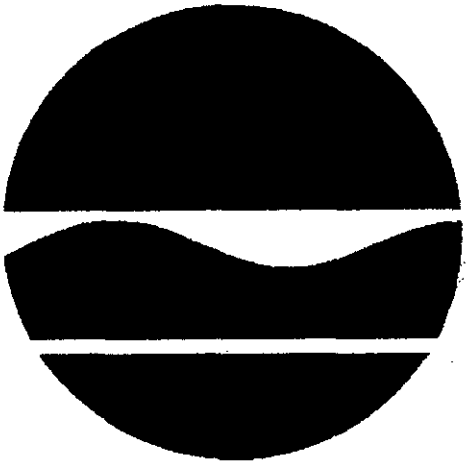

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

DIVISION OF HAZARDOUS WASTE REMEDIATION

RECORD OF DECISION

DEWITT LANDFILL INACTIVE HAZARDOUS WASTE SITE

SITE #7-34-012

TOWN OF DEWITT, ONONDAGA COUNTY

MARCH 1994

DECLARATION STATEMENT - RECORD OF DECISION

"Dewitt Landfill" Inactive Hazardous Waste Site
Town of Dewitt, Onondaga County, New York
Site No. 7-34-012

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedial action for the Dewitt Landfill inactive hazardous waste disposal site which was chosen in accordance with the New York State Environmental Conservation Law (ECL). The remedial program selected is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300).

This decision is based upon the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Dewitt Landfill Inactive Hazardous Waste Site and upon public input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A bibliography of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Assessment of the Site

Actual or threatened release of hazardous waste constituents from this site have been addressed by remedial construction activities completed as an Interim Remedial Measure (IRM). Prior to completion of the IRM, actual or threatened releases of hazardous waste presented potential threat to public health and the environment.

Description of Selected Remedy

Based upon the results of the Remedial Investigation/Feasibility Study (*RI/FS*) for the Dewitt Landfill and the criteria identified for evaluation of alternatives the NYSDEC has selected continuous maintenance of the landfill cap and periodic sampling of surface water and groundwater. The components of the remedy are as follows:

- Completion of the Interim Remedial Measures (capping, storm water control measures, site fencing). At this time, most of the work has been completed.
- Development and implementation of long term land use restrictions at the site to protect the installed cap and eliminate disturbance to the cap and its contours.
- Provide for periodic maintenance and repairs to the cap as necessary.

- Provide for the comprehensive monitoring of groundwater and surface water to evaluate the effectiveness of the cap, and the need for future active leachate collection as necessary.

New York State Department of Health Acceptance

The New York State Department of Health concurs with the remedy selected for this site as being protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the statutory preference for remedies that reduce toxicity, mobility, or volume as a principal element.

March 15, 1994
Date

Ann Hill DeBarbieri
Deputy Commissioner

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Record of Decision

"Dewitt Town Landfill"
Town of Dewitt, Onondaga County, New York
Site No. 7-34-012
March 1993

SECTION 1: SITE DESCRIPTION

The Dewitt Landfill is located in the Town of Dewitt in Onondaga County off Fisher Road and is adjacent to the Old Erie Canal. The site is approximately 57 acres in size and the area immediately surrounding the landfill is undeveloped. A light industrial area is located 0.5 miles north of the landfill and residential areas are located within 0.5 miles to the northeast, south, and west. The site is bordered to the north, east, and west by wetlands and to the south by the Old Erie Canal. A small portion of the eastern side of the landfill is located within the Town of Manlius. Figure 1 shows the site location.

SECTION 2: SITE HISTORY

2.1: Operational/Disposal History

The Town of Dewitt landfill was in operation from the mid 1950's until 1990. Community Right-to-Know reports document specific hazardous wastes taken to the Dewitt Landfill. Among these wastes were spent solvents, paint sludges and solids, and emission control "bag house" dust.

2.2: Remedial History

A preliminary site investigation of the Landfill (called a Phase 2) was completed in 1987 by the Town, in cooperation with the NYSDEC. Groundwater sampling conducted as part of this investigation revealed the presence of contaminants including benzene, ethyl-benzene, xylene, toluene, and vinyl chloride. Leachate outbreaks were also identified, including one along the canal tow-path. This persistant leachate seep was subsequently addressed by the Town in 1991 through the installation of a sump at the seep location.

In October 1990, the Town entered into a consent order with the Department that required a Remedial Investigation and Feasibility Study, as well as a complete remedial program be completed at the site. The consent order also required the landfill to be capped as an interim remedial measure (see section 4).

The Town has signed a State Assistance Contract with New York State which has provided for State funding of 75% of all eligible costs of the remedial program under the 1986 Environmental Quality Bond Act (EQBA) Title 3 program.

SECTION 3: CURRENT STATUS

The Town of Dewitt, in cooperation with the NYSDEC under the Title 3 program, initiated a Remedial Investigation/ Feasibility Study (RI/FS) in September 1991 to address the contamination at the site. The final Remedial Investigation Report was approved on November 30, 1993. Construction of the IRM (cap) began in August of 1992 and is scheduled to be complete on or before July 1, 1994.

3.1: Summary of the Remedial Investigation

The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site.

A report entitled "Town of Dewitt Landfill Remedial Investigation" has been prepared describing the field activities and the findings of the RI in detail.

The RI activities consisted of the following:

- Perimeter soil vapor survey
- Monitoring well installations
- Piezometer installations
- Air sampling
- Surface water, soil, and sediment sampling
- Groundwater sampling
- Hydrogeologic evaluation

The analytical data obtained from the RI was compared to Applicable Standards, Criteria, and Guidance (SCGs) in determining remedial alternatives. Groundwater, drinking water and surface water SCGs identified for the Dewitt landfill site were based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part V of NYS Sanitary Code. For the evaluation and interpretation of soil and sediment analytical results, NYSDEC soil cleanup guidelines for the protection of groundwater, background conditions, and risk-based remediation criteria were used to develop remediation goals for soil.

Based upon the results of the remedial investigation in comparison with the SCGs and potential public health and environmental exposure routes, no areas or media of the site are in need of further remediation beyond capping.

Groundwater sampling was performed using the 18 groundwater monitoring wells around the landfill perimeter. Table 1 indicates compounds detected in groundwater samples and their detected concentration ranges. Results from the two rounds of sampling indicate two samples with detectable concentrations of organics. However, none of the overburden wells contained organic contaminants in excess of Class "GA" groundwater standards or drinking water standards. The sampling also indicated several organic compounds in two downgradient bedrock wells at concentrations up to 22 ppb. However, only two of five bedrock groundwater wells contained concentrations of volatile organics above Class "GA" groundwater standards or drinking water standards. Although several volatile organic compounds were detected in groundwater, there is presently no use of groundwater for drinking water purposes in the vicinity of the site. Moreover, the levels of these organic compounds are very low.

No semi-volatile organic compounds were detected in groundwater samples. No pesticides/PCBs were detected in groundwater samples.

Several groundwater samples indicated concentrations of various inorganic compounds in both the overburden and bedrock wells. Concentrations of total barium, chromium, iron, lead, magnesium, manganese, sodium, and zinc in some wells were above NYS Class "GA" standards. With the exception of lead, however, the highest concentrations of these metals were found in upgradient wells. This indicates that most inorganics detected are also naturally occuring in the area. It is not unusual for naturally occuring inorganics to be detected at levels above Class "GA" standards.

The RI/FS has identified limited areas of surface water and sediment adjacent to the landfill which contain detectable concentrations of organics and metals. Table 2 indicates compounds detected in surface water samples and their detected concentration ranges. Table 3 indicates compounds detected in sediment samples and their detected concentration ranges.

Surface water samples taken within the wetland at various locations detected several volatile organic compounds at concentrations up to 3.1 ppb. With the exception of a chloroethane detection in one sample of 28 ppb, all organics detected in the surface water samples were below Ambient Water Quality Standards and Guidance Values for Class "C" and Class "D" surface waters.

One semi-volatile organic compound was detected at 5 ppb. No pesticides or PCBs were detected in the surface water samples.

Surface water samples also contained several inorganic compounds. Concentrations of Iron and zinc in some samples exceeded Class "C" and "D" standards. Cadmium was detected in one sample at a level slightly higher than the class "C" standard.

Sediment samples collected contained various volatile organic compounds (such as carbon disulfide, and methylene chloride) at concentrations up to 45 ppb. However, the volatile organics were detected at numerous locations upgradient from the landfill. This suggests that there are sources for these compounds other than the landfill.

Sediment samples also detected several semi-volatile compounds (such as various phthalates) at concentrations up to 3.4 ppm. However, the random occurrence of several semi-volatile organic compounds suggests that there are multiple sources which could include runoff from roadways, car exhaust, etc. One sediment sample contained pesticides (4,4'-DDD and 4,4'-DDT) at concentrations up to 32 ppb.

A sediment sample taken in the vicinity of a leachate seep contained concentrations of several inorganic compounds above background levels. These metals include antimony, arsenic, barium, iron, manganese, mercury, nickel, and sodium.

Soil samples were taken at 17 locations around the landfill perimeter. Table 4 indicates various compounds detected in surface soils and the range of concentrations.

Semivolatile organic compounds were detected in several soil samples at concentrations up to 14 ppm. However the majority of semivolatile compounds detected were below 1 ppm. Most semivolatiles detected were polynuclear aromatic hydocarbons (PAHs) such as phthalates. However, semivolatile compounds were also detected in the background soil sample.

One surface soil sample contained the pesticide beta BHC at a concentration of 30 ppb. Two samples contained concentrations of PCB Aroclor 1260 at 0.44 ppm and 0.55 ppm.

Surface soil sample concentrations were compared to the background soil concentrations for inorganic analysis. Several inorganics (such as antimony, calcium, and magnesium) were detected above background concentrations in most soil samples. However, most inorganics detected are in the general concentration range of background.

3.2 Interim Remedial Measures:

An IRM was conducted at the site as required by the consent order. An IRM is implemented when a source of contamination or exposure pathway can be effectively addressed before completion of the RI/FS. In this instance, it was recognized that the construction of a landfill cap would cause a significant reduction in the amount of precipitation entering the landfill waste mound, thereby substantially reducing the amount of leachate being generated by the waste. In addition, Solid Waste Management Facilities Regulations of 6NYCRR Part 360 require all closed landfills to be properly capped. In this instance, the IRM was designed in accordance with 6NYCRR Part 360 regulations.

Construction of the landfill cap IRM began in August 1992, and is scheduled to be completed by July 1, 1994. Capital costs for cap construction are $6,800,000.

Since the landfill is situated in a regulated wetland, a permit was obtained from the U.S. Army Corps of Engineers for construction activities required in the IRM. Permit #92-988-50 under authority of Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act was granted to the Town. The permit allowed the filling of 0.94 acres of wetland as part of the construction of the landfill cap.

3.3 Summary of Human Exposure Pathways:

A baseline human health risk assessment was performed as a part of the RI. This health risk assessment included an exposure pathway analysis to identify media of concern and assess the potential for human exposure based on these pathways. Potential risks were evaluated for four possible exposure scenarios: children playing in the adjacent park, children using the towpath, adults using the towpath, and workers on the landfill site. As concentrations of landfill related contaminants in accessible media were generally very low, the site was not found to pose any unacceptable health risks to the public in its vicinity.

3.4 Summary of Environmental Exposure Pathways:

A NYSDEC Division of Fish and Wildlife "Impact analysis" was performed at the site, with the following conclusions:

- Potential ecological receptors for the site include a variety of mammalian, avian, reptilian, and amphibious wildlife species, protected plants, and regulated wetlands.
- Exposure to wildlife receptors could potentially occur via contact or ingestion of contaminated surface soils, surface water, or biota.
- Impacts to the ecological receptors are the result of physical, chemical, and biological stresses on the ecosystem.
- The wetland system, of which the landfill is a part, is situated in an urban area, and has been stressed by road construction, habitat loss, increased human activity, and chemical inputs from the landfill as well as other adjacent commercial activities.

The overall conclusion of the fish and wildlife impact analysis is that landfill related contaminants have minimal effect on surrounding resources.

SECTION 4: ENFORCEMENT STATUS

The NYSDEC and the Town of Dewitt entered into a Consent Order on September 17, 1990. The Order obligates the Town to implement a full remedial program at the landfill and allows reimbursement to the Town of up to 75 percent of the eligible cost of the remediation.

Orders on Consent

Date	Index	Subject
10/17/93	R7-420-89-07	Remedial Prog.

The Consent Order required the completion of an RI/FS as well as an IRM (cap) and any necessary Remedial Design and Construction which was identified from the RI/FS findings.

SECTION 5: SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6NYCRR 375-1.10. These goals are established under the guideline of meeting all standards, criteria, and guidance (SCGs) and protecting human health and the environment.

At a minimum, the remedy selected should eliminate or mitigate all significant threats to public health and to the environment presented by the hazardous waste at the site, through the proper application of scientific and engineering principles.

The goals selected for this site are:

- Reduce, control, or eliminate the contamination present within the soils/waste on site (generation of leachate within the fill mass).
- Eliminate the threat to surface waters by eliminating any future surface leachate outbreaks from the site.
- Eliminate the potential for direct human or animal contact with the contaminated soils on site.
- Prevent, to the extent practicable migration of contaminants in the landfill to groundwater.
- Provide for attainment of SCGs for groundwater quality at the limits of the area of concern (AOC).

SECTION 6: SUMMARY OF THE EVALUATION OF THE ALTERNATIVE

Potential remedial alternatives for the Dewitt landfill site were identified, screened and evaluated in a three-phase Feasibility Study. This evaluation is presented in the report entitled Town of Dewitt Landfill Feasibility Study, January 1994. A summary of the detailed analysis follows.

6.1: Description of Alternative

The potential remedies are intended to address the contaminated soils, sediments, surface water and groundwater at the site. Because of remedial construction activities nearing completion, only one remedial alternative is discussed.

No Further Action Beyond IRM

Landfill Capping, Access Restrictions, Ground Water and Surface Water Monitoring

Present Worth:	$ 3,650,000
Capital Cost:	$ 0
Annual O&M:	$ 222,336 (years 1-5)
	$ 208,356 (years 6-30)
Time to Implement	6 Months

The No Further Action Alternative recognizes the remediation of the site completed under the IRM. It requires continued monitoring to evaluate the effectiveness of the remediation completed under the IRM. Several minor (low-flow) leachate seeps which existed prior to the cap construction are expected to be eliminated or reduced. These seeps were the primary mechanism for contaminant transport to surface water, sediment, and groundwater. With the cap effectively eliminating/reducing the infiltration of precipitation, and thus leachate generation, future leachate generation is expected to be minimal. Due to the nature of the site, with wetland surface water at the same level as the edge of the cap, conventional perimeter leachate collection is not suitable for this site. Such a collection system would have a detrimental effect on the wetland by collecting the wetland surface water as well. If concentrations of landfill constituents in the surface water and groundwater increase after completion of the IRM, and if leachate outbreaks are identified as the likely cause, further remedial measures will be evaluated to address the environmental media being impacted. Operation and maintenance (O&M) activities for the alternative include groundwater and surface water monitoring, maintenance of a SPDES storm water discharge permit, periodic mowing of the cap vegetation, periodic inspection, and repairs to the cap as necessary. An O&M workplan will be developed by the Town which will include the specific criteria the Town will use in evaluating whether the IRM remains effective in the future. O&M activities will also include evaluation and implementation of appropriate remedial measures (subject to NYSDEC approval) to address any future leachate impacts identified. Annual O&M costs are estimated by the Town and may be revised based on the O&M workplan.

6.2 Evaluation of Remedial Alternative

The criteria used to evaluate the potential remedial alternatives are defined in the regulation that directs the remediation of inactive hazardous waste sites in New York State (6NYCRR Part 375). For each of the criteria, a brief description is provided followed by an evaluation of the alternative against that criterion. A detailed discussion of the evaluation criteria and comparative analysis is contained in the Feasibility Study.

The first two evaluation criteria are termed threshold criteria and must be satisfied in order for an alternative to be considered for selection.

1. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether or not a remedy will meet applicable environmental laws, regulations, standards, and guidance.

The No Further Action Alternative will result in compliance with chemical specific SCGs. The IRM will result in a substantial decrease in leachate generation, which will reduce or eliminate chemical impacts on surface water, sediment, and groundwater. The concentrations of landfill constituents in the groundwater and surface water are very limited. Existing groundwater and surface water which has been impacted by leachate constituents should biodegrade/attenuate to reach applicable chemical specific SCGs after the cap has been constructed. This alternative will be in compliance with location specific SCGs for activities in wetlands under Section 404, and storm water discharge under a SPDES permit. It will also be in compliance with NYCRR Part 360 Solid Waste Management Facilities criteria for the construction of the cap.

2. Protection of Human Health and the Environment. This criterion is an overall evaluation of the health and environmental impacts to assess whether an alternative is protective.

The No Further Action alternative eliminates potential for casual human contact with the waste and the potential for future migration of landfill constituents to the surface water, sediments, and groundwater through the installation of a cap. Fencing and deed restrictions will also minimize potential for future human exposure to landfill constituents. If persistent leachate outbreaks are identified after completion of the cap, remedial actions will be evaluated to ensure protection of human health and the environment.

The next five "primary balancing criteria" are used to compare the positive and negative aspects of the remedial strategy.

3. Short-term Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated.

The No Further Action alternative produces no additional concerns for the protection of workers during construction beyond completion of the IRM. Protection of workers during the IRM was accomplished through appropriate monitoring activities and through the use of appropriate protective equipment. Protection of the nearest communities from dusts or other airborne emissions during the IRM was provided through monitoring and suppression methods. Dust and airborne emissions will not be a concern when the IRM is completed, provided a good vegetative cover is maintained.

4. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the alternative after implementation of the response actions. If wastes or treated residuals remain on site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the controls intended to limit the risk, and 3) the reliability of these controls.

The No Further Action alternative will provide for long term effectiveness and permanence. While the waste would remain, capping the landfill eliminates potential for casual human contact and specifically reduces potential for migration of landfill material constituents to the surface water, sediment, and groundwater. Fencing and deed restrictions will limit access to the site and prohibit activities which would disturb the cap. Ground water and surface water monitoring will provide an adequate and reliable means to evaluate the long term effectiveness and permanence of this alternative. The O&M workplan will provide a mechanism for evaluation of long term cap effectiveness, and will provide for additional steps as necessary to address future problems.

5. Reduction of Toxicity, Mobility or Volume. Preference is given to an alternative which permanently and significantly reduces the toxicity, mobility or volume of the wastes at the site.

The No Further Action alternative will reduce the volume and mobility of leachate with the completion of the IRM. Leachate is the primary mechanism for landfill contaminants to impact surrounding surface water, sediment, and groundwater. Natural degradation processes in the bedrock aquifer are expected to continue to reduce the already low concentrations, and hence the toxicity, of landfill constituents.

However, if leachate outbreaks persist, the O&M plan will provide a means to further reduce the volume and mobility of leachate.

6. Implementability. The technical and administrative feasibility of implementing the alternative is evaluated. Technically, this includes the difficulties associated with the construction, the reliability of the technology, and the ability to monitor the effectiveness of the remedy. Administratively, the availability of the necessary personnel and material is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc..

The No Further Action alternative requires no additional construction activities. Construction of the IRM cap will be complete by July 1, 1994. The groundwater and surface water monitoring programs and deed restrictions in this alternative are readily implementable. The cap will be reliably maintained without difficulty. If future significant leachate outbreaks are identified, they would be readily addressed through operation and maintenance.

7. Cost. Capital and operation and maintenance costs are estimated for the No Further Action alternative and presented on a present worth basis. The costs for this alternative are presented in Section 7.1.

This final criterion is considered a modifying criterion and is taken into account after evaluating those above. It is focused upon after public comments on the Proposed Remedial Action Plan have been received.

8. Community Acceptance - Concerns of the community regarding the RI/FS reports and the Proposed Remedial Action Plan were evaluated. No major public concerns have been expressed regarding the selection of the site remedy as presented in the Proposed Remedial Action Plan. A "Responsiveness Summary" that describes public comments received and the Department responses is included as appendix B.

SECTION 7: SUMMARY OF THE SELECTED ALTERNATIVE

Based upon the results of the RI/FS, and the evaluation presented in Section 7, the NYSDEC is proposing No Further Action Beyond the IRM as the remedy for this site.

This selection is based upon the review of the site data and evaluation of the alternative and its ability to meet the above discussed criteria.

The No Further Action alternative will result in compliance with SCGs. This alternative will be protective of human health and the environment. Access to the site will be restricted and deed restrictions will minimize activity which may be harmful to the integrity of the cap. This alternative provides for continuous monitoring and evaluation of leachate seeps. This alternative will also provide for evaluation and implementation of future additional steps, such as cap repair or the construction of leachate

collection sumps, if future conditions warrant further action. Prior to the IRM capping, leachate seeps were of minor flow and were usually intermittent. Leachate seeps are expected to be eliminated after the cap has been completed. However, if necessary, additional remedial actions to address any continued leachate impacts will be evaluated and implemented. The No Further Action alternative will provide for short term effectiveness since construction beyond the cap is not necessary at this time. This alternative will provide for long term effectiveness and permanence by the operation and maintenance activities for the cap. Long term groundwater and surface water monitoring will provide an adaquate and reliable means to evaluate effectiveness. The O&M workplan will provide a means to evaluate and implement further necessary steps to be taken if warrented. This alternative will reduce the toxicity, volume, and mobility of landfill leachate from the site. This alternative will be easily implemented.

The estimated present worth cost to implement the remedy is $3,650,000. This amount is the cost for operation and maintenance cost for 30 years. The average annual operation and maintenance cost is $210,686.

SECTION 8: HIGHLIGHTS OF COMMUNITY PARTICIPATION

Document repositories were established at the following locations for public review of project related material:

East Syracuse Public Library
4990 James Street
East Syracuse, NY 13057
(315 437-4841

Dewitt Town Hall
5400 Butternut Drive
Dewitt NY
(315) 446-3768

NYSDEC
Mr. Charles Branagh
615 Erie Boulevard West
Syracuse, NY
(315) 426-7400

NYSDEC
Jeffrey A. Konsella - Project Manager
50 Wolf Road
Albany NY 12233-7010
(518) 457-5636

The following citizen participation activities were conducted:

- Fact Sheet - April 1992: Descibed RI field activities to be performed and identified document repositories.
- Public Meeting - August 11, 1992: Presented the IRM Cap design, as well as RI/FS process.
- Fact Sheet - January 1994: Announced availability of PRAP, and public comment period.
- Public Meeting- February 1, 1994: Presented results of the RI/FS and presented the PRAP for public comment.

DEWITT LANDFILL
RESPONSIVENESS SUMMARY

Questions raised during the public meeting of February 1, 1994:

Q: How would you characterize the levels and types of organic contamination found at the site?

A: The volatile organic compounds detected were found in very small concentrations, generally in the low part per billion range. At the minor concentrations detected, these compounds are not considered to be a threat to human health or the environment. The semi-volatile compounds detected were primarily polynuclear aromatic hydrocarbon compounds and phthalates and were detected in minor concentrations up to the single part per million range. These compounds are found in substances such as tar, asphalt, plastics, etc. and detectable concentrations are not considered to be unusual. There were some detectable concentrations of pesticides, but in low concentrations which would be consistent with insect spraying.

Q: What is meant by "C" and "D" classifications for surface water bodies?

A: Class "C" refers to water bodies whose waters are suitable for fishing and fish propagation. The quality shall be suitable for primary and secondary contact recreation (such as swimming and boating) even though other factors (such as flow) may limit the use for that purpose.

Class "D" refers to water bodies whose waters are suitable for fishing. The water quality shall be suitable for primary and secondary contact recreation even though other factors may limit the use for that purpose. Due to such conditions as intermittency of flow, water conditions not conducive to propagation of game fishery or stream bed conditions, the water will not support fish propagation.

Class "C" and "D" waters have water quality standards for organic and inorganic compounds. Allowable concentrations for Class "C" waters are typically much greater than allowable concentrations in drinking waters (Class "A" or Class "GA"), but Class "C" standards are typically more stringent than Class "D" standards.

Q: Will the Town be able to use the landfill for other purposes such as recreational purposes?

A: The Department encourages usage of the property that will be compatible with the remediation which has been performed (i.e. the landfill cap). Recreational use of the site would require the Town to diligently maintain the landfill cap, and effect repairs which may become necessary (such as erosion, etc.). However, any site usage must wait until such time as the cap has been sufficiently vegetated, and periodic sampling of gas emissions from the landfill vents has been performed indicating no human health impacts.

Written Questions received:

Q: What is the odor emanating from the landfill which is noticeable when one is on the canal tow-path?

A: The odors detected are those from landfill material decomposition. The decomposition gases are typically hydrogen sulfide, methane, and carbon dioxide. The odor you noticed was most likely hydrogen sulfide, which one is able to notice even in very low concentrations. Hydrogen sulfide typically comprises less than 1% of landfill gas.

Q: What are the chemical composition and quantity of the landfill gases, and what are the long and short term effects of the gases on human health?

A: During RI fieldwork, ambient air samples were taken downwind of the landfill. These samples indicated trace compounds of some volatile organics, but all detections were several orders of magnitude below OSHA standards. The majority of landfill gas is typically methane and carbon dioxide, products of waste decomposition.

The Operation and Maintenance workplan currently being developed will require analysis of the gases being vented from the landfill. Sampling of the gas will occur at the individual vent locations, as well as at the perimeter of the landfill. If the results of this sampling indicates the need for treatment of the gas, individual vent risers can equipped (with carbon filtration) to eliminate any potential harmful gas.

An estimate has not been performed to determine the quantity of gas that will be released from the landfill. A general estimate for methane gas production within a landfill is 125 ft^3 per yd^3 of refuse per year. It is generally held that the majority of gas production occurs 5+ years after waste deposition ends. Landfill gas production generally peaks around 10-12 years after waste deposition ends.

Q: If landfill gases are combustible, what is the feasibility of collecting and burning the gas for some purpose such as power generation?

A: Landfill gases typically contain methane, which is a combustible gas. However, use of gases for electricity generation are subject to cost effectiveness considerations. Discussion of possible gas usage was raised to the Town, and the Town chose not to pursue such usage.

Q: The Remedial Action Plan should Include sampling and chemical analysis of the landfill gases, with regular updates available to the public.

A: The Proposed Remedial Action Plan includes the development of an Operation and Maintenance workplan, which will address sampling of the landfill gas. Results of the sampling will be available through the Town of Dewitt.

Dewitt Landfill Administrative Record

RI/FS

RI/FS Scoping Document, O'Brien & Gere Engineers, May 1991
RI/FS Work Plan, O'Brien & Gere Engineers, June 1991
Preliminary Hydrogeologic Evaluation, September 1992
Final RI Report, November 1993
Final FS Report, December 1993

Earlier Investigations

Town of Dewitt Sanitary Landfill Engineering Plan, O'Brien & Gere Engineers, November 1972
Plan of Closure, O'Brien & Gere Engineers, 1984
Phase II Investigation Workplan, O'Brien & Gere Engineers, 1986
Phase II Investigation Report, O'Brien & Gere Engineers, 1987

Interim Remedial Program

1991 Interim Remedial Program (IRP) Engineering Report, O'Brien & Gere Engineers, October 1991
1991 IRP Health & Safety Plan, O'Brien & Gere Engineers, March 1992
1991 IRP Quality Assurance/Quality Control Plan, O'Brien & Gere Engineers, March 1992
Interim Closure Contract Documents, O'Brien & Gere Engineers, 1992
Interim Closure Contract Drawings, O'Brien & Gere Engineers, 1992

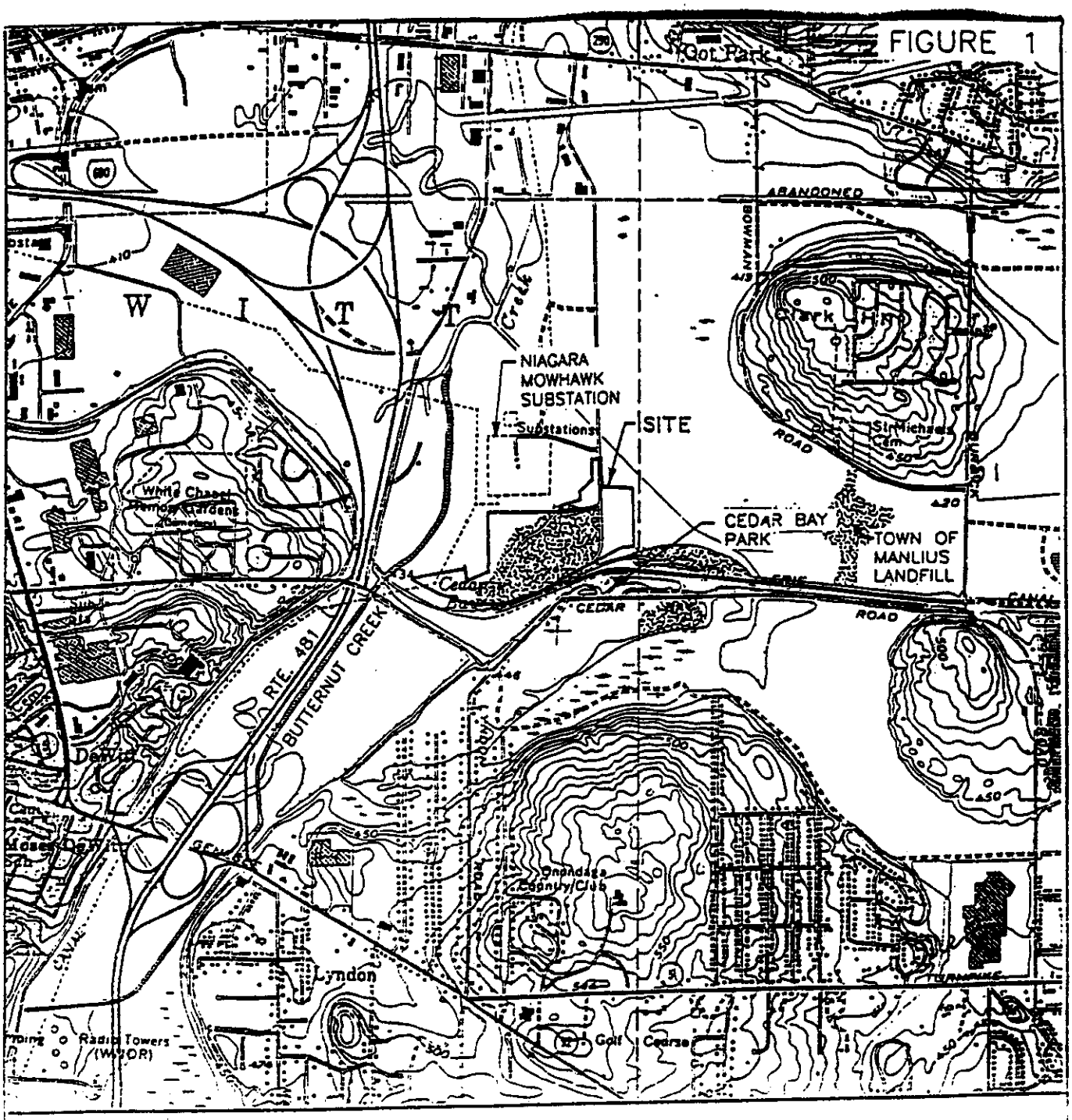
Legal Documents

Order On Consent, Index # R7-420-89-07
State Assistance Contract - 1986 Environmental Quality Bond Act Title 3 Inactive Hazardous Waste Disposal Sites Remediation Program

Other

Town of Dewitt Project Management Plan, Revised January 1993
Citizen Participation Plan, Appendix C of RI/FS Workplan, O'Brien & Gere Engineers, June 1991
Public Hearing Transcript from PRAP meeting of February 1, 1994

FIGURE 1



TOWN OF DEWITT LANDFILL
DEWITT, NEW YORK

SITE LOCATION MAP

0 2000 4000

SCALE IN FEET

ADAPTED FROM U.S.G.S. SYRACUSE EAST N.Y. QUADRANGLE

O'BRIEN & GERE

TABLE 1

Chemicals Detected In Ground Water Samples
Town of Dewitt Landfill
Dewitt, New York

Compound	Background/Off-Site		On-Site/Impacted	
	Frequency of Detection	Detected Concentration Range (µg/kg)	Frequency of Detection	Detected Concentration Range (µg/kg)
1,2,3-Trichlorobenzene	0/6		1/29	1 - 1
1,2-Dichloroethene	0/6		1/29	19 - 19
1,2-Dichloroethene (total)	0/6		2/29	1.2 - 22
Aluminum	6/6	13,300 - 104,000	27/29	571 - 96,800
Antimony	5/6	36.6 - 354	15/29	48.5 - 636
Arsenic	0/6		15/29	6.1 - 31.5
Barium	6/6	362 - 4,100	29/29	14.6 - 2,120
Beryllium	2/6	3.5 - 4.7	4/29	1.3 - 7.6
Calcium	6/6	266,000 - 1,830,000	29/29	224,000 - 6,700,000
Chloroform	0/6		1/29	0.7 - 0.7
Chromium	6/6	44.4 - 547	18/29	15.1 - 758
Cobalt	6/6	8.8 - 111	14/29	12 - 89.8
Copper	6/6	67.7 - 333	19/29	7 - 420
Iron	6/6	29,600 - 196,000	29/29	624 - 171,000
Lead	3/6	16.3 - 56	20/29	5.8 - 87.3
Magnesium	6/6	78,000 - 1,090,000	29/29	36,100 - 1,370,000
Manganese	6/6	672 - 5,940	29/29	50.6 - 5,550
Mercury	2/6	0.24 - 0.76	2/29	0.26 - 0.58
Methylene chloride	0/6		1/29	4 - 4
Naphthalene	0/6		1/29	14 - 14
Nickel	5/6	47.2 - 335	19/29	27.8 - 5,710
Potassium	6/6	5,380 - 17,400	28/29	2,780 - 1,520,000
Sodium	6/6	54,000 - 214,000	29/29	23,700 - 51,400,000
Trichloroethene	0/6		4/29	0.6 - 15
Vanadium	6/6	26.9 - 162	17/29	17.1 - 202
Vinyl chloride	0/6		2/29	1.0 - 1.1
Zinc	6/6	133 - 867	19/29	32.9 - 580

DYW:cmb/DEW566.33

TABLE 2

Chemicals Detected in Surface Water Samples
Town of Dewitt Landfill
Dewitt, New York

Compound	Background/Off-Site		On-Site/Impacted	
	Frequency of Detection	Detected Concentration Range (µg/kg)	Frequency of Detection	Detected Concentration Range (µg/kg)
1,1-Dichloroethane	0/7		2/16	0.5 - 1.6
1,2-Dichloroethene (total)	0/7		3/16	0.7 - 2.7
Aluminum	5/7	333 - 610	12/16	128 - 17,420
Antimony	3/7	42.6 - 60.6	5/16	53.2 - 244
Barium	7/7	45.2 - 98.2	16/16	46.3 - 694
Benzene	0/7		2/16	1.0 - 1.4
Cadmium	1/7	7.5 - 7.5	0/16	0
Calcium	7/7	95,000 - 248,000	16/16	80,300 - 251,000
Carbon disulfide	0/7		1/16	2.0 - 2.0
Chlorobenzene	0/7		2/16	0.7 - 0.8
Chloroethane	0/7		2/16	3.1 - 28
Chromium	0/7		1/16	161 - 161
Copper	1/7	13.8 - 13.8	1/16	7.4 - 7.4
Diethylphthalate	0/7	172 - 795	1/16	5.0 - 5.0
Ethylbenzene	0/7		1/16	3.0 - 3.0
Iron	7/7	172 - 795	16/16	154 - 177,000
Lead	5/7	2.6 - 3.3	7/16	2.4 - 10.8
Magnesium	7/7	22,100 - 43,600	16/16	16,100 - 44,400
Manganese	6/7	26.5 - 50.9	16/16	10.7 - 1,910
Mercury	1/7	0.87 - 0.87	1/16	0.28 - 0.28
Potassium	7/7	1,500 - 3,520	12/16	2,290 - 7,480
Sodium	7/7	19,400 - 242,000	16/16	18,700 - 143,000
Vinyl chloride	0/7		1/16	1.6 - 1.6
Xylenes (total)	0/7		3/16	0.7 - 13.0
Zinc	6/7	15.3 - 44.0	16/16	5.3 - 68.5

DYW:cmb/DEW566.34

TABLE 3

Chemicals Detected in Sediment Samples
Town of Dewitt Landfill
Dewitt, New York

Compound	Background/Off-Site		On-Site/Impacted	
	Frequency of Detection	Detected Concentration Range (µg/kg)	Frequency of Detection	Detected Concentration Range (µg/kg)
4,4'-DDD	0/6		1/13	32 - 32
4,4'-DDT	0/6		1/13	19 - 19
Acenapthene	0/6		3/13	50 - 86
Acenapthylene	1/6	76 - 76	1/13	210 - 210
Aluminum	4/6	7,480 - 12,600	10/13	2,190 - 15,800
Anthracene	1/6	120 - 120	4/13	56 - 360
Antimony	0/6		2/13	22.7 - 22.7
Arsenic	4/6	2.9 - 6.9	10/13	1.6 - 8.5
Barium	4/6	33.0 - 729	10/13	21.6 - 211
Benzo(a)anthracene	4/6	190 - 550	9/13	120 - 1,200
Benzo(a)pyrene	1/6	510 - 510	3/13	680 - 2,500
Benzo(b)fluoranthene	4/6	330 - 600	4/13	120 - 2,200
Benzo(g,h,i)perylene	1/6	360 - 360	1/13	1,600 - 1,600
Benzo(k)fluoranthene	4/6	250 - 480	4/13	110 - 1,600
Calcium	4/6	64,300 - 96,100	10/13	27,600 - 145,000
Carbazole	0/6		1/13	52 - 52
Carbon disulfide	1/6	40 - 40	3/13	6.0 - 45
Chromium	4/6	14.1 - 15.3	10/13	2.7 - 34.7
Chrysene	5/6	95 - 560	10/13	140 - 1,900
Cobalt	4/6	5.7 - 9.1	6/13	7.8 - 13.5
Copper	4/6	12.5 - 13.2	10/13	2.4 - 40.7
Di-n-butylphthalate	0/6		1/13	190 - 190
Di-n-octylphthalate	0/6		1/13	41 - 41
Dibenzofuran	0/6		1/13	43 - 43
Fluoranthene	6/6	170 - 1,200	13/13	64 - 3,400
Indeno(1,2,3-cd)pyrene	1/6	410 - 410	2/13	630 - 1,800
Iron	4/6	12,300 - 20,400	10/13	4,950 - 26,600
Lead	4/6	10.3 - 55.6	10/13	7.4 - 247
Magnesium	4/6	20,100 - 34,600	10/13	4,660 - 53,600
Manganese	4/6	217 - 252	10/13	132 - 388
Mercury	2/6	0.2 - 0.2	2/13	0.55 - 0.55
Methylene chloride	0/6		2/13	6.0 - 10
Nickel	4/6	18 - 32.2	8/13	14.1 - 37.5
Phenanthrene	5/6	70 - 490	9/13	140 - 1,100
Phenol	0/6		1/13	88 - 88
Potassium	4/6	1,660 - 2,090	10/13	516 - 3,280
Pyrene	6/6	120 - 700	12/13	42 - 2,600
Sodium	2/6	338 - 338	4/13	272 - 561
Vanadium	4/6	15 - 19.2	10/13	5.5 - 36.1
Zinc	4/6	61.2 - 74.4	10/13	15.4 - 155
bis(2-Ethylhexyl)phthalate	0/6		2/13	250 - 630

DYW:cmb/DEW566.32

Chemicals Detected in Surface Soil Samples
Town of Dewitt Landfill
Dewitt, New York

Compound	Background/Off-Site		On-Site/Impacted	
	Frequency of Detection	Detected Concentration Range (µg/kg)	Frequency of Detection	Detected Concentration Range (µg/kg)
1,2,4-Trichlorobenzene	0/1		1/19	290
1,4-Dichlorobenzene	0/1		1/19	160
2,4-Dimethylphenol	0/1		1/19	1,300
2,4-Dinitrotoluene	0/1		1/19	320
2-Chlorophenol	0/1		1/19	400
2-Methylnaphthalene	0/1		3/19	17 - 800
4-Chloro-3-methylphenol	0/1		1/19	520
4-Methylphenol	0/1		4/19	29 - 150
4-Nitrophenol	0/1		1/19	600
Acenapthene	0/1		1/19	24 - 1,300
Acenapthylene	0/1		1/19	200
Aluminum	1/1	20,600	19/19	3,690 - 23,300
Anthracene	1/1	9	8/19	14 - 1,700
Antimony	0/1		18/19	9.9 - 103
Arsenic	1/1	8.2	18/19	2.3 - 45.9
Barium	1/1	222	19/19	17 - 1,130
Benzo(a)anthracene	1/1	55	9/19	58 - 3,700
Benzo(a)pyrene	0/1		2/19	230 - 970
Benzo(b)fluoranthene	1/1	57	7/19	60 - 2,500
Benzo(g,h,i)perylene	0/1		1/19	130
Benzo(k)fluoranthene	1/1	57	7/19	54 - 2,400
Benzoic acid	1/1	240	0/19	
Beryllium	1/1	1.1	9/19	0.38 - 2.0
Calcium	1/1	26,200	19/19	9,990 - 153,000
Carbazole	0/1		3/19	96 - 740
Carbon disulfide	0/1		1/19	11
Chromium	1/1	24.8	13/19	10.6 - 31.3
Chrysene	1/1	75	9/19	64 - 4,100
Cobalt	1/1	11.1	15/19	2.4 - 34.8
Copper	1/1	22.8	19/19	5.7 - 42.6
Di-n-butylphthalate	1/1	270	19/19	66 - 3,400
Dibenzofuran	0/1		4/19	32 - 1,400
Fluoranthene	1/1	110	17/19	36 - 6,100
Fluorene	0/1		3/19	150 - 1,300
Indeno(1,2,3-cd)pyrene	0/1		1/19	160
Iron	1/1	37,000	19/19	8,010 - 55,600
Lead	1/1	37.5	19/19	9.6 - 45.5
Magnesium	1/1	3,400	19/19	4,400 - 54,800
Manganese	1/1	614	19/19	99.6 - 9,080
Mercury	0/1		6/19	0.13 - 0.45
N-Nitroso-di-n-propylamine	0/1		1/19	120
Naphthalene	0/1		3/19	27 - 2,000
Nickel	1/1	21.1	18/19	8.5 - 46.5
Pentachlorophenol	0/1		1/19	580
Phenanthrene	1/1	66	16/19	33 - 10,000
Phenol	0/1		1/19	420
Potassium	1/1	2,660	19/19	605 - 6,790
Pyrene	1/1	81	17/19	23 - 3,900
Sodium	1/1	281	8/19	124 - 981
Vanadium	1/1	32	14/19	14.5 - 39.7
Zinc	1/1	112	19/19	18 - 566
bis(2-Ethylhexyl)phthalate	0/1		15/19	82 - 2,900

DYW:cmb/DEW566.31